

# The Canadian Entomologist.

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## APOLOGETIC.

The Editor begs that the readers of the CANADIAN ENTOMOLOGIST will accept his apologies for the delay that has taken place in the issue of the present number. Since the date of the last number, he has made a complete change of occupation and residence, and his time has been so much encroached upon in consequence that it has been quite impossible for him to superintend the publication of this number until the present late date. For some years past he has been in charge of a large rural parish, the manifold duties of which gradually increased to such an extent as to leave him very little leisure for Entomological work; recently, however, he was offered, and, after some consideration, accepted the Head Mastership of the Trinity College School at Port Hope—a preparatory institution to the Church of England University at Toronto. During the last few weeks his time, as can readily be imagined, has been entirely engrossed with the arrangement of matters in his late parish, and the toil and trouble of removal. He has ventured to make this personal explanation in order that the reader may understand and excuse the long delay incurred in the issue of this number—a delay which, he trusts, will not soon recur.

His address is now: "THE REV. C. J. S. BETHUNE, *Trinity College School, Port Hope, Ont.*" Exchanges will please address: "CANADIAN ENTOMOLOGIST, *Port Hope, Ont.*"

## ACCENTUATED LIST OF CANADIAN LEPIDOPTERA,

BY E. B. REED, LONDON, ONTARIO.

This List is compiled on the same principle as the Oxford and Cambridge Accented List of British Lepidoptera, of which valuable little book we have made free use. A quotation from its preface well explains our object:

"The want of uniformity in the pronunciation of scientific names, and the consequent difficulty of communication between the less educated, but often more practical men of science, is an admitted evil. To afford a remedy so far as Lepidopterology is concerned, and for the especial use and benefit of those to whom circumstances have denied the advantage of

a classical education, while their inborn love of Natural History has led them to the study of this order of insects," we have published this accentuated list of Canadian Lepidoptera.

#### RULES FOR PRONUNCIATION.

Every vowel is to be pronounced short unless marked long, thus ē.

#### TABLE OF VOWEL SOUNDS.

<i>a</i>	is to be pronounced as in the word "hat."	<i>ā</i>	as in "hate."
<i>e</i>	" " " " met."	<i>ē</i>	" " " " mete."
<i>i</i>	" " " " hid."	<i>ī</i>	" " " " hide."
<i>o</i>	" " " " hop."	<i>ō</i>	" " " " hope."
<i>u</i>	" " " " duck."	<i>ū</i>	" " " " duke."

Two vowels occurring together, and not joined as in the diphthongs, are to be pronounced as two syllables; thus, *Regiella* pron. *Re-gi-el-la*, not *Re-giel-la*.

#### TABLE OF CONSONANT SOUNDS.

*c* is to be pronounced hard, as *k*.

*ç* " " " soft, as *s*.

*ch* " " " hard, as *k*, except where preceded by *s*, in which case the "sch" is equivalent to *sh*, and is printed *sch*: thus, *Frischella*, pron. as *Frishella*.

*g* is to be pronounced hard, as in "gate."

*g* " " " soft, " " " " gem."

The position of the accent (') shows where stress is to be laid: viz., on the syllable preceding the accent.

**LEPIDOPTERA**—*Lepidoptera*. Gr. *Lepis* a scale, *pteron* a wing. Insects whose wings are clothed with scales.

**DIURNI**—*Diur'ni*. Day-fliers.

**RHOPALOCERA**—*Rhopalocera*. Gr. *Rhopalon* a club, *keras* a horn. Insects whose antennae are clubbed at the extremity. All butterflies have this peculiarity.

**PAPILIONIDÆ**—*Papilio'nida*—the family of which the genus *Papilio* is the type.

**PAPILIO**—*Papilio*, a butterfly. Linnaeus first attempted to combine in some degree Natural and Civil History, by attaching the names of personages illustrious in their day to insects of particular kinds. His first division of the Butterflies consists of *Equites* (Knights), and these are sub-divided into *Troes* and *Achivi* (Trojans and Greeks).

**TURNUS**—*Tur'nus*. A prince of the Rutuli, who contended with *Aenæas* for the princess *Lavinia*.

**TROILUS**—*Tro'ilus*. A son of Priam and Hecuba killed by Achilles.

**PHILENOR**—*Phile'nor*. A Grecian proper name.

**ASTERIAS**—*Ast'eras*. Daughter of *Cæus* and *Phœbe*, and sister of *Latona*.

**THOAS**—*Tho'as*. King of *Chersonésus* to whom *Iphigenia* was brought.

**AJAX**—*Ajax*. A Grecian hero, son of *Telamon*.

**PIERIDÆ**—*Pierida*. The family of which the genus *Pieris* is the type.

**PIERIS**—*Pi'eris*, a Muse. The Muses derived their name Pierides from Mount *Pierus*, where they were worshipped.

PROTODICE—*Prōtōdice*. Gr. “Protos” first, “Dice” the name of one of the hours—in allusion probably to this insect being one of the earliest to appear in Spring.

RAPÆ—*Rāpæ*. Feeds on Rape. (*Brassica Rāpæ*).

OLERACEA—*Olerācea*. Feeds on Cabbage (*Brassica Olerācea*).

COLIAS—*Cōlias*. A surname of Venus from a promontory in Attica where she was worshipped.

## NOTES ON SOME OF THE COMMON SPECIES OF CARABIDÆ, FOUND IN TEMPERATE NORTH AMERICA.

BY PHILIP S. SPRAGUE.

ARTICLE NO. IV.

*Harpalus (Carabus) pensylvanicus*, Degeer. Mem. Ins. IV. 108. Reddish brown; head dusky; shells striate; body beneath, antennæ and feet testaceous. Inhab. Penn. N. A. Tast. p. 104, t. IV. f. 22, Degeer.

*H. (C.) pensylvanicus*. Winged; body above black; beneath ferruginous. M. A. Fab. Syst. Elut. I. 195.

*H. (C.) pensylvanicus*. Resembles *ruficornis*. Head black; thorax almost square, with a longitudinal line impressed in the middle and two posterior impressions; elytra black, striated; body beneath brown, more or less clear. Oliv. III. 57, t. XI. f. 92 b.

*H. bicolor*, Say. Head black; mouth and antennæ rufo-testaceous; gula piceous; thorax glabrous on the disk; a dorsal impressed line; area of hind angles impressed and confluent punctured; posterior angles rounded; elytra striate; striæ impunctured; margin with numerous punctures; pectus and post-pectus piceous-black; piceous on the disk, with obsolete punctures; feet testaceous pale; venter piceous-black; tail paler. Trans. Amer. Philo. Soci. II. 26.

*H. faunus*, Dej., and *flavipes*, Dej., Cat. 3rd ed. p. 15. Oblong oval; above black; thorax nearly square; on both sides behind punctured; basal foveæ distinct; posterior angles nearly right; elytra striate; sides obsoletely punctured; behind obliquely sinuate; antennæ and feet testaceous. Dej. Sp. IV. 254. The foregoing descriptions are supposed by Dr. LeConte to refer to one and the same species described by Degeer as *Carabus pensylvanicus*, and this decision is now acquiesced in by other entomologists. This example of the lack, of minute and systematic description is only one of the many; in fact it is the rule, as you will see by the many synonyms attached to other species and is the great difficulty all students experience in determining them.

*Harpalus pensylvanicus*, Dej., N. A. Long. .55 in. (45-65). Broad oblong oval, above usually dull black; sub-Alpine and northern varieties blacker and more shining; legs, antennæ and mouth testaceous yellow; thorax one-fourth broader than long, scarcely narrowed behind the middle; sides broadly rounded and strongly depressed; the margin is quite narrow

at the apex, widening posteriorly, and absorbing the whole bassal foveæ, making a broad flattened space internally from the apex of the basal angle ; basal foveæ strongly marked, and with the margin heavily and confluent punctured ; basal angles obtuse, somewhat rounded ; elytral striæ deep ; interstices convex, and at the sides punctured, in some specimens confluentely ; no dorsal puncture ; mentum distinctly toothed. The broadly rounded sides, the wide and punctured margin of the thorax, with the side punctures of the elytra, are the special parts that differ from the following species, to which it is most nearly allied.

*Harpalus compar*, Lec.—Mass. to Cal. Long. .55 in. Oblong oval ; above reddish black, somewhat shining ; beneath lighter ; legs, antennæ and mouth reddish yellow ; thorax one-fourth broader than long ; strongly but narrowly depressed at sides ; distinctly narrowed behind ; basal foveæ shallow, confluentely punctured in centre ; basal angles obtuse, scarcely rounded ; flattened above, and with the side margin finely punctured ; elytral striæ well marked, not deep, with the interstices flattened, and with a few obsolete punctures at the sides ; no dorsal puncture ; mentum tooth distinct. This species differs from *H. pensylvanicus* by the thorax being distinctly narrowed behind the middle instead of broadly rounded ; the depressed margin is narrower ; not so broad and flattened at the basal angle, yet somewhat depressed ; the punctures are finer and not confluent except in basal foveæ ; the apex of basal angle is quite well defined ; the interstices of elytra are flat ; the punctures at the sides nearly obsolete ; sometimes only a few points are seen on the seventh and ninth interstices. This beetle was described quite a number of times by our early entomologists under different names, which being pre-occupied necessitated a new one, which was given by Dr. LeConte.

*Harpalus erythropus*, Dej. Oblong oval ; above black ; thorax nearly square ; punctured on both sides behind ; basal foveæ shallow ; posterior angles nearly right ; elytra striate ; behind obliquely sinuate ; antennæ and feet reddish-yellow. Long.  $5\frac{1}{2}$  lines. Penn. This beetle much resembles *faunus* (see under the head of *H. pensylvanicus*), but is a little smaller ; it is very nearly of the same color ; the thorax is less rounded at the sides ; sides not depressed ; basal foveæ less marked ; elytra nearly of the same form ; interstices smooth, not punctured at the sides ; palpi, antennæ and feet reddish-yellow. N. A., Dej. Sp. IV. 258. The above is a translation of the original description of DeJean. My description of *H. compar* will answer for this species, with the following differences : it is much smaller ; long .44-50 in. ; the sides of the thorax are perhaps more distinctly narrowed ; the punctures of basal foveæ and sides a very little deeper, and without punctures at sides of elytra. Were a large *erythropus* and a small *compar* placed side by side, the only real difference would be the punctures at the sides of elytra. These two species run so close together as to make it doubtful if they are distinct. The three species just described, with an intermediate one, *H. longicollis*, Lec., which I will leave for a

future time, have puzzled carabæan entomologists from the first describers to the present time, and I fear that until we have some additional way of determining species we shall still continue in doubt. With quite a large series coming from Texas to Oregon and from Canada to Florida, I am at a loss where to place some examples, they so strongly partake of what we consider two distinct species. The preceding descriptions are typical forms which will absorb the mass of all captures.

Since Article No. 2 was written, I have received from Missouri *Harpalus testaceus*, Lec. (See page 59, Vol. 2.) Oblong oval ; reddish-yellow, shining ; thorax more than one-half shorter than broad ; posterior angles right, quite prominent, with the base on both sides shortly impressed ; elytra at apex scarcely sinuate ; striae obsoletely punctured ; interstices a little convex, with a single puncture on the third.—Trans. Phil. Philo. Soci. X. 385. In addition to the above, which is Dr. LeConte's description translated, I will describe the specimen in my cabinet. Long. .39 inch ; uniformly light testaceous ; thorax nearly twice broader than long ; narrow and sinuated at the sides behind the middle ; strongly and broadly depressed ; basal angles obtuse ; apex prominent ; basal foveæ are impressed points ; elytral striae deep ; interstices convex ; no dorsal puncture ; body beneath has accessory ambulatorial seta. Dr. LeConte says, Pro. Acad. Nat. Sci. 1855, p. 101, "elytra without dorsal puncture." With the above corrections this beetle will be readily recognized.

*Harpalus faunus*, Say.—Long. .42-55 in.; oblong oval ; reddish black, shining, lighter beneath ; thorax nearly square, margins lighter, clear ; sides sub-parallel, strongly depressed ; basal foveæ broad, deep, and with the margin well punctured ; basal angle right, apex slightly rounded ; elytral striae deep ; interstices convex, not punctured ; ♀ has a row on the seventh, and sometimes also on the ninth, which, with the square thorax, and light margins, makes this a well-marked species.

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A MONTHLY journal has been started in Jena devoted to the interest of Sericulture.

ILLINOIS STATE ENTOMOLOGIST.—We learn that Dr. Wm. LeBaron, of Geneva, Kane county, Ills., has been appointed to the office of the State Entomologist, made vacant by the death of our late associate. Well done, Governor Palmer ! Our Illinois friends have good cause to rejoice at the appointment !—*Amer. Entomologist.*

## ENTOMOLOGICAL GLEANINGS.

## PAPER NO. 2.

BY W. SAUNDERS, LONDON, ONT.

*Phytocoris linearis* (*Capsus oblineatus*, Say.)

I regret that I had not observed before writing paper No. 1, a valuable article by my esteemed friend Riley on this insect, in his last Annual Report on the insects of Missouri. He there speaks of effects produced by it on young pear trees in that section, precisely similar to those I described and expresses the opinion, which I also entertain, that the puncture of this insect is peculiarly poisonous to the young growth on the tree. He says, "it attacks many kinds of herbaceous plants, such as dahlias, asters, marigolds, balsams, cabbages, potatoes, turnips," &c., and several other trees, besides pear, viz., quince, apple, plum and cherry. They deposit their eggs and breed on the plants, and the young and old bugs together may be noticed through most of the summer months. The young bugs are perfectly green, but in other respects do not differ from their parents except in lacking wings. There are probably two broods during the season. I have observed the full grown bugs throughout the summer, but more abundant early in August; I noticed them very numerous about some swollen diseased ears of corn, resulting from that peculiar black fungoid growth to which it is at times subject. Mr. Riley suggests as remedies strong tobacco water, quassia water, vinegar and cresylic soap.

*Affecting the apple, Phycita nebula*, Walsh.

While looking over some apple trees, on the 23rd of May, I observed the work of a small case-making larva, which I had never noticed before. Its case resembled a long miniature horn, wide at one end, tapering almost to a point at the other, and frequently twisted in a very odd manner. There were generally portions of dead leaves fastened around the case, so as to partially conceal it, and a firm base of attachment was made for it by gnawing off the young bark from the twig on which it rested, and then firmly glueing it with some glutinous secretion to the spot thus laid bare. The case was curiously constructed of silk interwoven very cleverly with the excrement of the artificer, and had a smooth whitish surface internally, with an exterior also smooth, but of a yellowish brown color.

The larva lives inside this curious structure, coming out only when it wants food, and quickly retreating when danger threatens. Its length when full grown is about six-tenths of an inch, with a body tapering slightly towards the hinder extremity. Its head is medium sized, rather flat, dark reddish brown with a dull roughened surface, mandibles or jaws dark shining brown.

The body above is a dark dull brown with a slight greenish tint, the second segment being nearly covered above with a horny looking plate, similar in appearance to the head, but a little paler, and edged behind and at the sides with a darker shade—on each side below this plate is a flattened blackish prominence—on each side of third segment is also placed a small shining black tubercle. On each segment from the third to terminal inclusive, are several very minute blackish dots, from each one of which arises a single pale brown hair.

The under surface is a little paler than the upper, with a more decided greenish tint, feet green banded and tipped with brownish black, prolegs dull greenish brown.

It changes to a chrysalis sometimes, and I think usually within the case. I found them thus changed in some cases on the trees, but one or two of the specimens among those brought home and fed, came out of the case and changed to a pupa on the outside. The chrysalis was about four-tenths of an inch long, and of a reddish brown colour; one specimen was observed to effect its change on the 8th of June, and produced the winged moth on the 21st of the same month, showing the duration of the pupa stage to be about thirteen days.

On examination the moth proved to be the *Phycita nebula*, (Walsh) to which he has given the significant common name of "The Rascal Leaf Crumpler." In Mr. Walsh's excellent Report on the noxious insects of Illinois, he states that this larva affects the plum and wild crab as well as the cultivated apple. The young larvae appear late in the summer, and construct their little cases, surrounded with portions of dried leaves, in which they pass the winter in a torpid state, awaking to activity and resuming their depredations as soon as the young foliage expands in spring. He was of opinion that this insect was confined exclusively to the North Western States. Its occurrence in Canada shows that in this his views were incorrect. Although he had bred a number of specimens, he had never found them preyed on by any species of ichneumon fly, whereas in my case, although I only bred seven or eight, one of them produced an interesting ichneumon, the name of which has not yet been determined.

The moth is a pretty little thing, its wings measure, when expanded, about seven-tenths of an inch. Its fore wings are pale brown, with patches and streaks of silvery white; the hind wings are plain brownish white; the under side of both wings is pale whitish brown; the hind wings paler than the fore wings. It is figured and described by Mr. Walsh, in the Proceedings of the Boston Society of Natural History, vol. 9 p. 312-3.

The amount of damage done by this insect in my own case was not great; their numbers were not sufficient to cause much alarm, but when they are very numerous, one can easily imagine, that their destructive

powers would be very considerable, for besides consuming the foliage, their pernicious habit of gnawing away all the young bark from and about the spot to which the case is attached, would in all probability lead sometimes to the girdling of the young branches, and their consequent death. The little bunch of dead and dried leaves around their cases gives a ready means of detecting the presence of these little rascals, and no better remedy for them than hunting them up, and crushing the case with the hand, has yet been suggested.

*From the Grape, Cidaria diversilineata.*

Just as the grape blossoms were fully open, and while pinching in the rapidly growing branches of a seedling vine, a blossom bunch attracted attention by its unusual appearance. A closer inspection showed that parts of the bunch had been eaten away, and the remaining portions drawn together by light silken threads, and within the enclosure was a dull brown caterpillar, with its body much contracted, and just ready to assume the chrysalis state. The bunch was removed from the vine and enclosed in a small box, when in a day or two the change of form took place. The chrysalis was six-tenths of an inch long, and of a pale reddish brown color. In about ten days afterwards, it produced the perfect insect which proved to be *Cidaria diversilineata*. These observations disclose an interesting fact, regarding the history of this insect, that is, that it passes the winter occasionally, if not invariably, in the caterpillar state, hibernating in some secure retreat, where it sleeps peacefully, till called into activity again by the genial warmth of spring, when in a few days it finishes its growth, and effects its changes as already described.

This moth measures when its wings are expanded  $1\frac{1}{2}$  inches. Its color is pale ochre yellow, crossed by many greyish brown lines, and clouded also with patches of the same, particularly along the margin of the wings. The under side is a little paler than the upper, with fewer and fainter lines, but bordered along the outer edges, much the same as the above. The body and legs are similar in color to the wings, the legs being marked with black about the joints.

On the 7th of June, a number of reddish geometric caterpillars, were found on the vine leaves, in which they had eaten innumerable holes of various shapes and sizes; these proved to belong to the same insect. At this time they were about an inch long. The head was rather small, flattened in front and bilobed, each lobe projecting above and terminating in a point; color dull brownish green; mandibles tipped with reddish brown.

The body above was dull yellowish green, with a reddish or pink tinge, second segment pale yellowish green, smooth and very similar in appearance to the head, but larger, 3rd, 4th, 11th, 12th and 13th seg-

ments, pale yellowish green, all the middle segments have a decided pinkish tinge, surface of body wrinkled. Terminal segment with two short greenish spines extending backwards over the anal lid.

The under surface was similar in color to the upper, with a double whitish line down the middle; feet pinkish; prolegs green.

Many variations in color were observed in different specimens of this larva. One which answered the descriptions given above on the 7th, changed its skin on the morning of the 8th, and appeared in a garb of very dark brown, nearly black, with longitudinal lines of paler brown. A younger specimen was yellowish green, with the head very large and prominent. Another older one was bright, deep red above, with a wide, broken band of dull green down the middle of under surface, without any appearance of the double whitish line so prominent in most of the others. A fourth, about the same size, was dull whitish green, with the whitish lines below also wanting.

A full grown caterpillar found on the 10th of June, measured one and a-quarter inches. Its head was dull reddish brown, the body above yellowish green as in former description, but with a few very small whitish dots on each segment. On each side of the 2nd segment was a small reddish spot, and on the third a larger one of a darker shade; on this latter segment the folds of the skin protrude, making the spot appear like a brown prominence. The spaces between the middle segments were yellowish, while two or three of the terminal rings were dull brown, in other respects it answered to the previous description. The under surface had a reddish hue, a central dull reddish line, bordered on each side with a faint whitish stripe, edged again without by dull red; feet reddish, with the space between them yellowish green; prolegs reddish brown; spaces between bluish green. June 11th. This larvæ had now fastened itself up in a leaf, preparing for its next change.

I have taken fresh-looking specimens of this moth again on the wing during the middle part of the present month, August. They will probably deposit their eggs late in the month, producing larvae which will attain to nearly the full growth before winter, and hybernating during the cold season, resume their destructive labors with the opening spring.

As a remedy when their numbers are great, syringing the vines with hellebore and water would probably serve a good purpose. They are not confined to the vine, but are found also on the Virginia creeper, *Ampelopsis quinquefolia*.

NOTES ON THE LARVA OF *OPHIUSA BISTRARIAS*, *Hübner*.

BY W. SAUNDERS, LONDON.

Late in July a number of specimens of a larva apparently allied to the genus *Catocala* were taken from the silver maple (*Acer dasycarpum*, Ehrn.) The description of this larva is as follows :

Length 1.40 inches ; somewhat onisciform.

Head medium sized, flattened, bilobed ; color pale ashen grey, with streaks of pale brown appearing under a magnifying lens as a fine network ; a dark brown, nearly black, stripe on each side, and a few short grey hairs scattered over its surface.

Body above brownish-grey, with numerous streaks and dots of pale brown. A double irregular dorsal line, widening here and there throughout its entire length. There are many other broken lines of the same character, composed chiefly of dots, but none of them continuous. A sub-dorsal row of whitish dots, composed of two or three on each of the middle segments, less numerous on anterior segments ; a few pale grey hairs placed chiefly along each side below spiracles. On the hinder part of 12th segment is a raised crescent-shaped line edged behind with black, and on the terminal one two whitish dots with a small patch of black at their base. Spiracles pale, oval, edged with black.

Under surface paler and greenish ; quite bluish-green from seventh to eleventh segments, with a round central blackish spot on hinder part of seventh and eighth. Anterior pair of prolegs present but dwarfed, and not used in progression ; body slightly arched with each forward movement. Feet greenish, semi-transparent ; prolegs bluish green dotted with brown.

This larva is subject to considerable variation in its color and markings.

*Var. A.*—Body paler in color. Head pale, with lines very much less distinct. The black edging of raised line on 12th segment scarcely apparent.

*Var. B.*—Body dark-red, with markings similar to those of the usual grey variety.

*Var. C.*—Body dark-brown, nearly black. Head larger, with markings prominent.

When about to go into chrysalis this larva cuts through a portion of a leaf of the tree on which it has fed, and turning it over constructs a snug little case, fastening it up closely and carefully with silken threads, and in this completes its transformations. After remaining in the pupa state about two weeks the imago appeared, which proved to be *Ophiusa bistriaris*.

## LIST OF COLEOPTERA.

TAKEN AT GRIMSBY, ONTARIO, BY J. PETTIT.

(Continued from page 118.)

## SPHINDIDÆ.

\*Sphindus Americanus, *Lec.*

## CIOIDÆ.

\*Cis fuscipes, *Mellie.*\*Ennearthron mellyi, *Mell.*\*Ceracis militaris, *Mell.*

## TENEBRIONIDÆ.

Phelopsis obcordata, *Lec.*Blapstinus metallicus, *Lec.*Centronopus calcaratus, *Fab.*\*Merinus laevis, *Oliv.*Xylopinus saperdoides, *Oliv.*Haplandus femoratus, *Fab.*\*concolor, *Lec.*Nyctobates Pensylvanica, *De Geer.*\*Iphthinus opacus, *Lec.*Tenebrio molitor, *Linn.*castaneus, *Knoch.*tenebrioides, *Beauv.*Paratenetus punctatus, *Spin.*\*Tribolium madens, *Charp.*Uloma impressa, *Mels.*\*culinaris, *Linn.*\*mentalis, *Horn.*Boletotherus cornutus, *Fab.*Boletophagus corticola, *Say.*\*Rhipidandrus flabellicornis, *Lec.*\*Pentayhyllus pallidus, *Lec.*Diaperis hydni, *Fab.*Haplocephala bicornis, *Oliv.*Platydema excavatum, *Dej.*Americanum, *Lap.*\*picilabrum, *Mels.*flavipes, *Fab.*Hypophloeus parallelus, *Mels.*\*thoracicus, *Mels.*\*\*Diœdus punctatus, *Lec.*Helops micans, *Fab.*Meracantha contracta, *Beauv.*\*Strongylum tenuicolle, *Say.*

## CISTELIDÆ.

Allecula nigrans, *Mels.*\*Hymenorus obscurus, *Say.*niger, *Mels.*Cistela brevis, *Say.*sericea, *Say.*Isomira quadristriata, *Couper.*\*velutina, *Lec.*\*Mycetocharis foveatus, *Lec.*\*tenuis, *Lec.*binotata, *Say.*\*Chromatia amœna, *Say.*Capnochroa fuliginosa, *Mels.*Androchirus luteipes, *Lec.*

## LAGRIIDÆ.

Arthromacra aenea, *Say.*

## PYROCHROIDÆ.

Pyrochroa flabellata, *Fab.*femoralis, *Lec.*Schizotus cervicalis, *Newm.*Dendroides concolor, *Newm.*Canadensis, *Latr.*

## ANTHICIDÆ.

\*Corphyra collaris, *Say.*lugubris, *Say.*newmani, *Lec.*Notoxus anchora, *Hentz.*\*Anthicus obscurus, *Ferte.*

\* Species marked with an asterisk have not been included in the list of Canadian Coleoptera.

Three specimens taken by Dr. Milward.

Anthicus formicarius, *Ferte.*

- \*floralis, *Payk.*
- scabriceps, *Lec.*
- cervinus, *Ferte.*
- \*coracinus, *Lec.*
- \*Xylophilus piceus, *Lec.*
- \*fasciatus, *Mels.*

## MELANDRYIDÆ.

- \*Cænifa pallipes, *Mels.*
- Tetratoma truncorum, *Lec.*
- Stenotrachelus arctatus, *Say.*<sup>2</sup>
- Penthe obliquata, *Fab.*
- pimelia, *Fab.*
- Synchroa punctata, *Newm.*
- Emmesa connectens, *Newm.*
- Melandrya striata, *Say.*
- \*Xylita hævigata, *Hel.*
- Spilotes quadripustulosus, *Mels.*
- Hypulus simulator, *Newm.*
- Serropalpus striatus, *Hel.*
- Enchodes sericea, *Hald.*
- Ditæa liturata, *Lec.*
- \*Symphora flavicollis, *Hald.*
- \*rugosa, *Hald.*
- Halomenus scapularis, *Mels.*
- Eustrophus bicolor, *Fab.*
- bifasciatus, *Say.*
- tomentosus, *Say.*
- Orchesia gracilis, *Mels.*

## MORDELLIDÆ.

- \*Anaspis nigra, *Hald.*
- flavipennis, *Hald.*
- rufa, *Say.*
- \*Tomoxia inclusa, *Lec.*
- Mordella melæna, *Lec.*
- scutellaris, *Fab.*
- \*octopunctatus, *Fab.*
- marginata, *Mels.*

Mordella lineata, *Mels.*

- \*serval, *Say.*<sup>3</sup>
- triloba, *Say.*
- \*Mordellistena lutea, *Mels.*?
- trifasciata, *Say.*
- \*limbalis, *Mels.*
- \*ornata, *Mels.*
- scapularis, *Say.*
- \*tosta, *Lec.*
- \*varians, *Lec.*
- \*morula, *Lec.*
- \*unicolor.<sup>4</sup>
- \*divisa, *Lec.*
- \*liturata, *Mels.*
- \*discolor, *Mels.*

Pelecotoma flavipes, *Mels.*

## MELOIDÆ.

- Meloe angusticollis, *Say.*
- Macrobasis Fabricii, *Lec.*
- Epicauta Pensylvanica, *De Geer.*
- vittata, *Dej.*

## CEPHALOIDÆ.

Cephaloon lepturides, *Newm.*

## ŒDEMERIDÆ.

- Ascelera ruficollis, *Say.*
- puncticollis, *Say.*

## MYCTERIDÆ.

Mycterus scaber, *Hald.*<sup>5</sup>

## PYTHIDÆ.

- Pytho Americanus, *Kirby.*
- \*strictus, *Lec.*
- Boros unicolor, *Say.*
- \*Rhinosimus nitens, *Lec.*

## SCOLYTIDÆ.

- \*Crypturgus atomus, *Lec.*
- \*Cryphalus fasciatus, *Say.*
- \*mali, *Fitch.*
- \*materarius, *Fitch.*

<sup>2</sup> A single specimen, taken on the Lake Shore. <sup>3</sup> Taken in the Township of Adelaide.

<sup>4</sup> Taken in Bosanquet.

<sup>5</sup> A single specimen taken by Dr. Milward.

- \**Cryphalus pullus*, Zimm.  
    \**puberulus*, Lec.
- \**Xyloterus retusus*, Lec.  
    *politus*, Say.
- \**Xyleborus pyri*, Harr.  
    \**pubescens*, Zimm.  
    \**sparsus*, Lec.  
    \**plagiatus*, Lec  
    \**celatus*, Eich.
- Tomicus calligraphus*, Germ.  
    \**cacographus*, Lec.  
    *pini*, Say.

- \**Micracis suturalis*, Lec.  
    \**aculeatus*, Lec.
- \**Chramesus hicorniae*, Lec.
- \**Phlorotribus limniaridis*, Harr.
- Hylesinus aculeatus*, Say.  
    \**opaculus*, Lec.  
    *dentatus*, Say.
- Dendroctonus terebrans*, Lec.  
    \**simplex*, Lec.
- \**Hylastes porculus*, Er.  
    *pinifex*, Fitch.

#### MISCELLANEOUS NOTES.

REARING BUTTERFLIES FROM THE EGG.—In the last number of the *Canadian Entomologist* I mentioned that I had succeeded in inducing females of *P. ajax* to deposit eggs, by enclosing them in a keg placed over the growing food-plant—the paw-paw. The first female enclosed on May 16th laid a number of eggs, and another female was enclosed in the same keg on the 17th. I was obliged to leave home for some days, and returned on June 1st, when I found but six larvæ in the keg. These had hatched and attained a length of three-fourths of an inch within sixteen days. On the 5th of June the larvæ were mature and had stopped feeding; the whole time from the laying of the eggs being but three weeks. On the 20th one ♂ *Marcellus* emerged; on the 21st a ♀ *Marcellus*, and by the 23rd four others emerged, all *Marcellus*.

On the 1st June I put three ♀ *Ajax* into another keg; by the 2nd 37 eggs were deposited. These began to hatch on the 6th. From this lot I obtained 24 chrysalids, which began to give imagos by 3rd of July. From them I obtained 12 ♂ and 10 ♀, all *Marcellus*.

On June 7th I shut up a ♀ *Marcellus*, the first I had noticed flying this year. By the 23rd I had five larvæ from this lot. The imagos began to appear on the 4th of July, and gave three ♀ and one ♂, all *Marcellus*, not distinguishable from those produced from the eggs of *Ajax* as above.

So that the question of the identity of *Ajax* and *Marcellus* may be regarded as settled.

I have had no difficulty, by some means, in inducing other species to deposit eggs. On a young tulip tree I placed two black females of *Turnus (Glaucus)*, and have now several larvæ growing as the result. I have also raised two broods of *C. Philodice*, and the *Nisoniades lycidas*, and *N. pylades*, Scudder.

It is necessary in these experiments to watch carefully for small spiders, who very soon discover the eggs and devour them remorselessly.  
—W. H. EDWARDS, Coalburg, West Va.

FOOD-PLANT OF *DARAPSA VERSICOLOR*.—I enclose leaves of the plant on which the larvæ of *D. versicolor*, Harris, the rarest of our Sphinges, feed; it is a swamp plant, common in the vicinity of Brooklyn, N. Y.—W. H. EDWARDS.

[The plant has been kindly determined by Prof. Macoun to be *Cephalanthus occidentalis* (the Button Bush). It is, he states, a shrub growing on mud flats or along the low banks of streams; its leaves are opposite or in whorls of three leaves; its flowers are white growing in round heads about an inch across—hence the name.]

COLORADO POTATO BEETLE.—In addition to the localities mentioned in our last number, we have received a specimen of this destructive insect from Mr. N. H. Cowdry, Stratford, Ont., which was found there "on the sidewalk in a very mutilated condition." Mr. Saunders has received specimens from Sarnia, and has heard of its being found at Amherstburg. The last number of the *American Entomologist* mentions that it has been found also at Point Edward, the extreme southern end of Lake Huron. If prompt action be not taken by the farmers in the western section of the country, we shall soon, we fear, have to chronicle its spread over the whole of our country.

NOTE ON A HABIT OF CERTAIN INDIAN COLEOPTERA.—The Rev. A. B. Spaight, late Missionary to Northern India, has informed me of a fact frequently observed by him at Moultan, and which has, I believe, acquired additional interest from the circumstances of its being a disputed point amongst Naturalists.

It appears that certain large beetles belonging to the *Lucanidae* and *Longicornia* are said to saw off small branches from trees in order to get at the sap upon which they feed. Mr. Spaight (who only began to study the habits of insects after he had left England) arrived in India under the impression that the jaws of these large beetles (*Lucanidae* ?) were solely intended for burrowing,—indeed, he had been told almost as much; what was his surprise then, upon first meeting with them in their native haunts, to see the huge jaws clasping a branch round which at the same time the beetle was rapidly whirling, so that in a short time the branch fell to the ground completely sawn through; whereupon the insect immediately set to work to suck up the sap!

Being struck with this apparently new fact, Mr. Spaight paid particular attention to it, and noticed the same thing over and over again,

so that he is quite sure about the correctness of his observations.—A. G. BUTLER, in the *Entomologist Monthly Magazine*.

MIMICRY.—At a recent meeting of the Entomological Society of London, England, the President read the following extract from a letter, dated "Sarawak, 17th April, 1870," from Mr. A. Everett :—

" My brother has found two remarkable spiders. One, which we had not the means of keeping at the time, was lying with its legs pressed closely beside its body, and was white streaked with black in irregular fashion ; when he called me to see it, I looked closely but in vain for it, the only thing visible on the leaf being apparently a patch of bird's dung ; when it moved, one saw immediately what it was. The other is similar in colour and behaviour, but seems to belong to a different genus, and the resemblance to the droppings of a bird is not so completely deceptive. These would appear to be instances of protective mimicry, and as such will perhaps be of interest to you. I have another example, almost if not quite as evident : I had a caterpillar brought me, which, being mixed by my boy with some other things, I took to be a bit of moss with two exquisite pinky-white seed-capsules ; but I soon saw that it moved, and examining it more closely found out its real character : it is covered with hair, with two little pink spots on the upper surface, the general hue being more green : its motions are very slow, and when eating, the head is withdrawn beneath a mobile fleshy hood, so that the action of feeding does not produce any movement externally ; the shape is oval, and the edges are fringed with tufts of hair : it was found in the limestone hills at Busan, the situation of all others where mosses are most plentiful and delicate, and where they partially clothe most of the protruding masses of rock : I placed it in spirit, but it has become shrunken and turned to a dirty yellowish colour. Such things, however, require to be seen alive in order to properly appreciate the close resemblance they bear to the particular objects they resemble."

Mr. De Grey mentioned that he had often been struck by the resemblance of the caterpillar of *Melitaea Cinxia* to the flower of the plantain upon which it feeds, whilst the pupa resembled the seed of the same plant.

The Secretary exhibited a large woolly gall of the oak and a number of living specimens of *Cynips ramuli* which had emerged therefrom. The gall was found on the 24th of June, at Idsworth, near Horndean, by Sir J. Clarke Jervoise, Bart., who wrote respecting it as follows :—

" My attention was yesterday called to what I thought was a ball of sheep's wool in a meadow where there were no sheep, and I placed it under a glass clock-shade for security. This morning I found the clock had stopped, and a quantity of flies were in the case and in the works of the clock. I never happened to have seen a similar growth on the oak, a

sprig of which is visible in the woolly gall, and I have sent some of the flies in spirits. There are more hatched out in the box since I placed the oak-gall in it." How many specimens of the Cynips hatched in the clock-case did not appear, but the box exhibited was found to contain upwards of eighty.—*Zoologist*.

**DEATH OF PROF. LACORDAIRE.**—We learn with regret that death has claimed the greatest of modern Coleopterists. Prof. Lacordaire died at Liége on the 18th July, in his 70th year.

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